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The Art of Needle Making

By HOWARD G. HUBBARD

Needle making in 1764, as described and illustrated in one of the issues of the *Universal Magazine* for that year, was a craft which required both manual skill and experienced judgment in selecting and tempering steel. No chemical and physical laboratories controlled quality nor did power-driven machinery and high-tension production methods increase quantity. In fact, the way the successive processes skip around over the two illustrations, presented by the magazine and herewith reproduced, leaves us wondering whether the arrangement was purely for pictorial effect, or whether the advantages of contiguous processing had not yet been realized. Efficient or not, judged by modern standards, the methods of that day did produce needles of quality and one shop would count its annual product in hundreds of thousands.

Our 1764 author recommended the use of Hungarian, rather than German, steel, "for that of Germany begins to degenerate." The first process consisted of heating the steel under "pit or char-coal," hammering to take away the angles and to lengthen and round it, and then drawing it through a wire-drawing iron, equipped with a series of holes of decreasing diameter, and continuing the successive drawings until the fineness required for the size needles to be made was reached. The author seems to have been a bit of a philosopher as well as a craftsman of merit, for he observes:

"As the facility of the wire-drawing requires a ductile and soft steel; and the needle a fine and brittle steel; it is the workman's business to make a choice, among all sorts of steel, of that wherein those two qualities are combined. But as there are few workmen

in general who understand sufficiently their interest, to spare nothing and yet to make their work excellent; there are few needle-makers but say that the more needles are broke, the more they will sell; and they therefore make

*This issue of
The Chronicle
is respectfully
dedicated to
the memory of
Dr. Henry C. Mercer*

(See page 7)

them of the finest steel, assuring us with confidence, that good needles should break."

The steel, being sufficiently wire-drawn, was cut into "slips" of convenient length, several of which slips were held parallel to each other in the left hand of the workman at Fig. 1 (Plate I), while with his right hand he operated the heavy shears which clipped off the steel. There was no gauge, only the judgment of the man's eye, yet the pieces, as they dropped into the receiving pail, were all of a length. At Fig. 4, a workman flattened the

(Continued on page 3, column 1)

Candle Making Devices

By S. EDSON GAGE

Some years ago, while looking over my material pertaining to Lighting, I was struck with the wide variety of the candle moulds, and began to wonder how many others there were. This led to a search through New England, New York, and Pennsylvania, and so many different kinds were secured, that I made the following classification for convenience in collecting, although I have a number of specimens which do not seem to fit into any general group. The figures refer to the number and arrangement of the tubes, as I have found them. Standard length is about 10 inches.

TYPE 1.

Tin. Rectangular top. No base.

Standard: 1x2; 1x3; 1x4; 1x5; 1x6;
2x2; 2x3; 2x4; 2x5; 2x6; 2x3x2;
3x3; 3x4; 4x8.
Short: 1x4; 1x6; 2x3; 2x5.
Long: 1x3.

TYPE 2.

*Tin with pewter tips. Rectangular top.
No base.*

Standard: 1x8; 1x10; 1x12.

(N.B.—Types 1 and 2 are principally from Pennsylvania.)

TYPE 3.

*Tin. Rectangular top. No base.
Banded.*

Standard: 1x4; 1x6; 1x8; 1x12; 4x8.
Short: 2x6.

TYPE 4.

*Tin. Rectangular top.
Rectangular base.*

Standard: 1x2; 1x3; 1x4; 1x6; 2x2;
2x2x2; 2x3; 2x3x2; 2x4; 2x5; 2x6;
2x7; 2x8; 2x9; 2x10; 2x11; 2x12;
2x12 (divided); 3x3; 3x4; 3x5;
3x6; 3x8; 3x12; 3x16; 4x4; 4x5;
4x6; 4x9; 4x12; 4x18; 5x5; 5x10;

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6x6; 6x8; 6x10; 6x12; 7x10; 8x9;
8x13.
Short: 2x3; 2x4; 2x5; 2x6; 3x4;
3x6; 4x6.
Long: 1x1; 1x6; 2x3; 3x4; 4x6.
(N.B.—Type 4 are principally from New
England.)

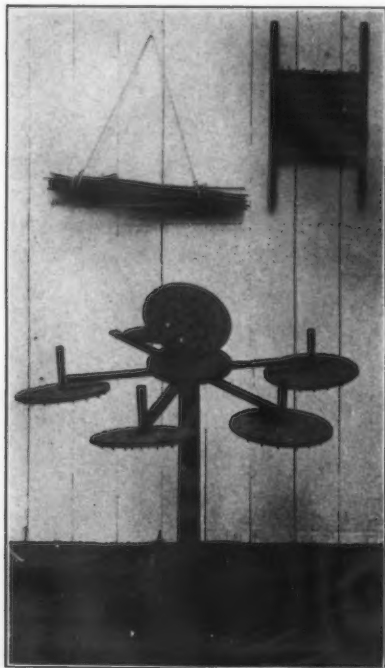
TYPE 5.

*Tin. Rectangular top.
Base arched length-wise.*

Standard: 1x6; 1x8; 2x3; 2x3x2
(taper); 2x4; 2x5; 2x6; 2x8; 3x6;
3x8; 4x6; 6x12.
Short: 2x3; 2x4; 2x6.
(N.B.—Type 5 are principally from Penn-
sylvania.)

TYPE 6.

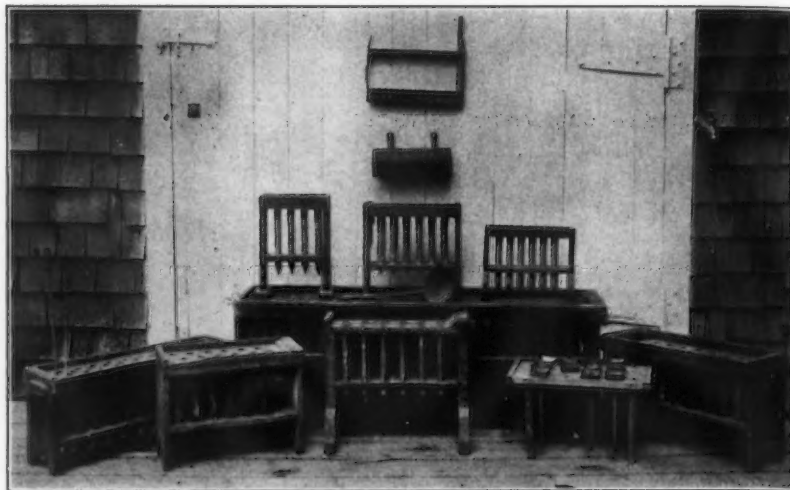
Tin. Rectangular top. Pyramid base.
Standard: 2x3; 2x4; 2x6.



CANDLE DIPPERS

On the floor stands a machine for dipping. The wicks were tied to the hooks which were set in the under sides of the discs (one of which rests upside-down on the center of the machine). The first disc was lifted off, the wicks dipped in the tallow, and the disc replaced on the machine, which was then rotated until the second disc came within reach, and was handled the same way. By the time the first disc completed the circuit, it was ready for another dip. Above at the right, is a rectangular frame, with a handle on the upper side, and hooks underneath, for the same purpose. At the left, a bunch of candle-rods, the most primitive device for dipping. The wicks were tied around the rods, dipped, and the rods were then laid across two poles, until the tallow was hard enough for "a second coat".

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CANDLE MOULDS IN WOODEN FRAMES

The tubes are of tin, pewter, or pottery, as explained in the text. Those with few tubes, — four, six, etc., seem to be the scarcest, but note the giant at the rear of the group, which makes twelve dozen candles at one "run". Just above the moulds is the typical cylindrical tin candle-box. At the top, a seldom-met-with device, made of tin, with a single row of sockets, similar to those of a candle-stick at the bottom, and a strip above with a corresponding row of holes to take the upper end of the candles. One candle has been inserted in the rack, at the right. Was this merely for storage purposes? On the largest mould rests a dipper for pouring in the tallow.

TYPE 7.

Tin. Rectangular top. Four legs.
Standard: 2x3; 2x4; 2x6; 4x9.

TYPE 8.

*Large ceremonial candles.
Tin. Rectangular top. No base.*
Long: 1x1; 1x3.

*Pewter. No base.
Six-sided and fluted.
Also 1x1 square base.*
Long: 1x1.

TYPE 9.

*Tin. Tubes in circle.
Circular top and base.*
Standard: 7 tubes; 10 tubes; 12 tubes.

TYPE 10.

*Tin. Rectangular top.
Base arched cross-wise.*
Standard: 2x3; 2x4; 2x5.

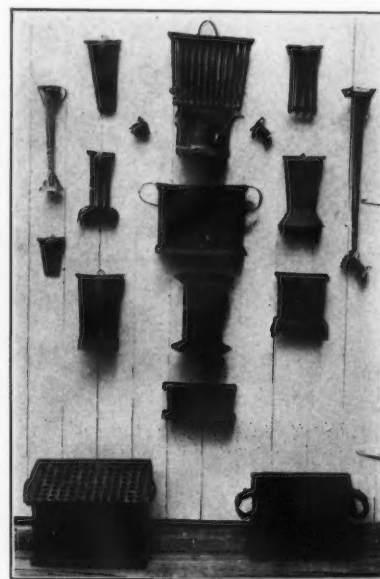
TYPE 11.

Tin tubes. Wood frame.
2x6; 3x4; 3x5; 3x9; 3x10; 3x16;
4x8; 4x10; 3 plus 4x7; 5x1.
(N.B.—Type 11 are principally from Ver-
mont.)

TYPE 12.

Red pottery tubes. Wood frame.
2x6; 3x6; 3x8.
(N.B.—Type 12 are from Hudson, N. Y.,
and New Hampshire.)

(Continued on page 6, column 3)



CANDLE MOULDS OF TIN

These are found in almost endless variety, both as to shape, and as to number and arrangement of tubes. A few typical examples are here shown. Note the single tall mould, at the right, for church candles. The second object from the top, in the center, is for pouring the tallow. On either side of this, are moulds for birthday-cake candles.

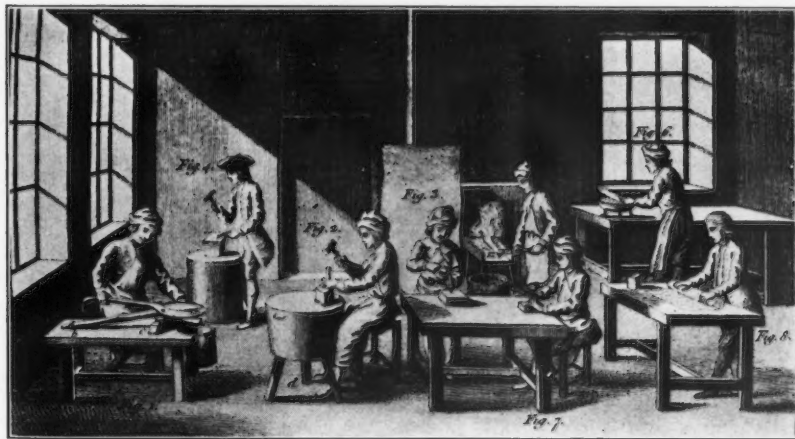
Early American Industries Association

Needle Making

(Continued from page 1, column 2)

eye ends, holding four or more needles at a time. From here the needles were taken to the fire for softening, and then to the workman at Fig. 2, who drive-punched the eyes. At Fig. 3, the little bit of steel remaining in the eye was removed, the operation being called "clearing the eye," and at Fig. 7 a craftsman, expert with the file, rounded the eye ends, formed the points, and made the little grooves which run parallel to the eye.

The needles were now ranged on a long, narrow, flat piece of iron, Fig. 5, heated over a charcoal fire, and plunged into a pail of cold water. "This operation is the nicest of all, as the entire quality of the needle depends on it. Too much heat burns the needle, too little leaves it soft. No fixed rule can be given on this head: It is experience that must inform the eye of the workman, to make him know by the colour of the needle when it is time to temper it." They were then "baked" or "roasted," "to hinder their breaking easily," a fire shovel over a rather weak fire being used. Here again great care was essential, as too much heat made them soft, too little left them brittle. Baking and further hammering were also needed to take out the bends and twists caused by tempering.



NEEDLE MAKING — Plate I.

The polishing began at Fig. 8. Here from twelve to fifteen thousand needles would be laid out on a piece of new buckram, covered with powder of emery, sprinkled with oil, and rolled up in the form of an oblong purse (Fig. 1, Plate II). From here, a hop,

skip, and a jump landed the "purse" on the table at the other side of the illustration (Figs. 5-6), where a thick board, with a heavy weight, was suspended by four cords from the ceiling (not shown), at a height which brought



NEEDLE MAKING — Plate II.

just the right amount of pressure onto the "purse." Now for two days,—long-houred days,—the two workmen pushed the load back and forth, back and forth, until the needles were burnished to a nicety.

The "purse" would now be opened and the needles dropped into a pail of warm water and strong soap (Fig. 2),

the needle against the rapidly revolving emery wheel.

Packing was elaborate, so that the needles might reach the far countries of the world in bright and perfect condition. Having been wiped with a rather oily, soft linen rag, two hundred and fifty of a size were wrapped in coarse blue paper and marked with the "numero," No. 1 being the largest, No. 22 the smallest. Four of these packets would be wrapped together in white paper, four of these again into packets containing four thousand needles, and twelve of these with one of two thousand into a final grand package of fifty thousand of assorted sizes. These large packages were covered with six folds of coarse white paper, tied with pack-thread, this covered with two hogs' bladders, and then a final covering of coarse packing cloth. A label was attached, inscribed with the name and mark of the maker and listing the "numeros" contained, and your needles were ready for shipment.

where the black, oily grease or "coomb" would be washed off. Out of the washing, they would be dropped into the tumbler at Fig. 3, the tumbler filled up with bran, and the whole "fanned" or "winnowed" until the needles were bone dry. In wooden vessels, at Fig.

A bicycle patent was granted to William R. Clarkson on June 26th, 1819, for an "improved curricule." Bicycles were then known as "curricles" and "velocipedes." — J. N. K.

The Chronicle

Flax Dressing by Hand

By WILLIAM B. SPRAGUE

(Continued from last issue)

Choosing completely dry weather, when the stalks were "like tinder" (A), the dresser took measures to shatter the woody core into small particles,—the process being known as *breaking*. This was sometimes done with a block and mallet (D, E), and two authors (M, N) describe and illustrate a specialized implement designed for this purpose, with long curved handle and corrugated face, called a *bott-hammer*, but this is attributed to the Belgians, and was probably never used in this country. Although machinery for breaking flax was invented as early as 1824 (C), it is certain that the old-fashioned, home-made *flax-brake* (Fig. 3) was in general use on the farm for many years after that. While the construction of these crude machines vary in many details, the essential part consists of two sets of hard-wood slats, the slats of each set being stood up on edge, and then fixed parallel to one another, and a few inches apart. The lower edges of the upper slats and the upper edges of the lower slats are bevelled sharp, and the two sets are so arranged with respect to each other that the edges of the upper fall between those of the lower. Usually there are two slats in the upper set and three in the lower, but sometimes there is at least one more in each set. Generally the two sets are hinged together at one end, so as to form a pair of jaws, and the upper set heavily weighted. They are supported, by legs or some other form of standard, about two and a half feet above the ground. The operator, in working the brake, took in his left hand a bundle of flax, laid it transversely over the edges of the lower slats, and repeatedly raised and dropped the upper jaw upon it, pushing the stalks into a new position after each blow, "beginning with the roots, next the tops, and finally going through the entire length" (M). Sometimes the flax was dried and again put through the brake (M), and some times an "open toothed" brake was used first, and afterwards a "close" or "strait" brake (A), the slats of the latter being set closer together than those of the former. In another type of brake, the two sets of slats were not hinged together, but the upper one was merely laid upon the lower, with the

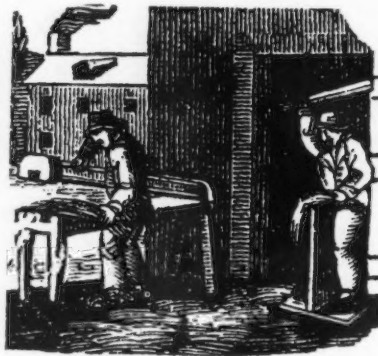
flax between, and pounded with a heavy mallet (A).

Swingling or *scutching* was next resorted to, in order to free the fibers from the woody fragments, which still clung to them. The *swingling knife* or *scutching knife*,—rarely, *swing knife* (N 2470)—was always a hand-whittled, hard-wood sword, about two feet long over all, with either one or two sharp edges (Fig. 4). It closely resembled the implements used in dairies



RIPPLING FLAX
(From Tomlinson's Illustrations (G))

for cutting the cheese curd, and scraping the inner sides of the churn, except that the latter are made of light soft wood, which would not be sufficiently durable for swingling. The broken stalks were held by the hand-ful across the end of an upright board, and repeatedly struck (G) with the edge of the swingling knife. One au-



BREAKING AND SWINGLING FLAX
(From New England Farmer's Almanac, 1840)

thority uses the term "scrape," but the consensus of tradition bears out the accuracy of the accompanying illustration of the process, which clearly shows that lusty blows were delivered. Another writer states that the flax was "hung on a perpendicular board, and bruised with a wooden beetle" (D). When the board was fixed in a permanent standard, it was called a *swingling block* (A) or *swing stock*

(N 2470), but these rarely turn up, probably because, when no longer required for this purpose, they could readily be converted to some other. A special type of swingling block had a horizontal slit cut in its side, through which the stalks were passed, rather than hung over the end (G, M), but it is doubtful that this type was used in this country. In Pennsylvania, they sometimes made swingling machines, consisting of a large wheel, upon which a number of swingling knives were mounted in prolongation of its spokes, and which could be turned with a crank. A competent workman could swingling forty pounds in a day (A). The swingled flax was sometimes "placed in a wooden trough, and pounded with a pestle-shaped beetle to soften it" (A).

The next implement to come into play was the *hetchel* (*hatchel*, *heckle*, *hackle*)—once known as the *ruffler* (A),—a group of closely set iron or steel spikes, fixed in a wooden base. (Fig. 5). It was sometimes constructed by fastening a block of wood on a short plank; a brass or iron plate was pierced with the spikes, their heads being allowed to come flush against the metal plate, and the latter was then inverted and secured to the wooden block, so that the teeth stood erect with the points uppermost (M). On German hetchels, the group of spikes was usually round, instead of rectangular (M). It was important that the teeth should be of equal length and evenly spaced (M). Sometimes the field of teeth was shielded with a box-like cover, which fitted down snugly over them. The primary purpose of this was probably protection against rust, but an occasional specimen, with the cover fastened by clamps, suggests the idea that the maker was also guarding against injury to meddlesome children. The function of this stationary comb was threefold, (1) "the parting of the filaments into their finest fibrils, (2) the separation of short fibers which are unfit for spinning, (3) the equable and parallel arrangement of the long filaments" (M). "In heckling, the workman seizes a lock of flax, called a *strick* (G), by the middle, throws it upon the points of the coarse heckle, and draws it toward him; at the same time, with the other hand, spreading the flax and preventing it from sinking too deeply among the teeth. In this way, the flax is divided into two parts,—the short fibers

(Continued on page 6, column 3)

Early American Industries Association

Early American Industries Association

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Communications should be addressed as follows: Pertaining to THE CHRONICLE, to W. B. Sprague. Applications for membership, to S. E. Gage. Suggestions for prospective members, to A. E. Lownes. Other matters to E. T. Goodnow. Addresses as above.

*This issue was printed by Leon S. Case
Flushing, N. Y.*

W. B. SPRAGUE, Editor.

Our Purpose

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men and other workers.

Dues

The annual dues are one dollar, payable September first, for the year immediately ensuing. The *Chronicle* for the current year is sent to all members without additional charge. Back numbers (except No. 12) may be secured from the Treasurer for 20c each. For further information, address any of the officers.

Mr. Joseph Nathan Kane has very kindly given THE CHRONICLE permission to reprint, from time to time, certain short items from his books, *Famous First Facts* and *More First Facts*, which we think will be of especial interest to our members. Mr. Kane will receive credit for this courtesy by having his initials placed at the end of each paragraph.

Annual Meeting

The third annual meeting of the Association will be held at the Hotel Northampton, Northampton, Mass., on Saturday, August 29th, at 10 a.m. Aside from the usual business of electing officers, and hearing their reports, there will be at least two important questions for the meeting to consider. The first is whether it is advisable to create several classes of membership, differing only with respect to the amount of dues payable, with the hope that many members will voluntarily agree to pay \$2, \$5, \$10 or even more, and thus eliminate the necessity of a later appeal for contributions, as more fully discussed under the heading "Our Finances" in CHRONICLE No. 17, page 5. The other question is whether the Association should be incorporated, of which the possible advantages are pointed out in the other editorial on this page.

Many of our members have never seen the extraordinary collections of tools and utensils at Mr. Lewis N. Wiggins' Old Tavern, and those who have, will find them well worthy of another visit. It is hoped that many will find it possible to arrive and dine together at the hotel on the evening before the meeting, and friends and relatives of members are cordially invited to be present.

The original use of the word *clapboard* was not in connection with siding for a house, nor probably did it derive from *clayboard*, a sort of outside lath for "wattle and daub" huts. The word originally meant a short, riven oak stave imported from Germany for barrel staves and pipe staves. Other spellings were *claboard* and *clawboard*. In its current use, *clapboard* is an Americanism, as the English do not use clapboards for siding.

— L. L. T.

Hugh Platte, Lincolnes Inn, London, 1594, writes: "Warming pinnes (pans), or froes, are put into thin cases, and those cases wrapped in linnen baggs, to serve to heat bedds, and to cast one into a kindly sweat. The like device is used in conveying such iron pinns into hollow boxes of wood, first lined inwardly with metal, either to laye under their feete when they write, or studie, in cold weather, or in their coches to keep their feete warm."

— H. G. H.

Shall We Incorporate?

The proposal that the Association incorporate in the near future has emanated from several independent sources, and is well worthy of consideration. The appropriate form of corporation could be formed in the State of New York for about \$75.00, as, in this instance, the necessary legal services would be performed free of charge. Up to the present time, practically the entire burden of maintaining the Association and fostering its growth has fallen on its few officers and committeemen, and should it so happen, for any reason, that these particular individuals were unable to carry on, the Association would be much less apt to disintegrate if it were a corporation, with a board of trustees, of whom at least some would feel it their duty to take steps for its preservation. While the purely administrative work of the Association would necessarily still be handled by the officers, and frequent meetings of the board of trustees would probably not be feasible, this board, especially if chosen from among those members who have shown unusual interest, and if well distributed geographically, could be of invaluable service to the Association in helping to build up its membership and in devising plans for increasing its usefulness. For these reasons, it might be advisable to elect a large board, possibly as many as twenty-five. Many of us hope that the time may come when the Association may have a museum and a library of its own, and, while that may be a matter of the remote future, it is perhaps not too early to encourage gifts and bequests of material for that purpose, but obviously nothing of this kind can fairly be expected, until the permanency of the Association and the proper care of its property are assured. It is hoped that the members will give careful thought to this suggestion, and be prepared to discuss it at the annual meeting.

A quadrant that was practical was invented in 1730 by Thomas Godfrey, who called it a "reflecting quadrant." It was used on vessels plying between the West Indies and the Colonies in 1731-1732. The invention was credited to Hadley of England, but the Royal Society sent £200 to Godfrey to make amends.

— J. N. K.

The Chronicle

The Old Tanbark Mill

By MARTHA E. WARNER

From time immemorial to the present day, no method of manufacturing leather has been discovered equal to that of using the tannin extracted from the bark of trees, the most important of which is the oak with its different varieties, also the sumach and the hemlock. In the spring of the year, the bark is cut from live trees, and later put in a stone mill and reduced by the crusher stone to small, and as far as possible uniform particles, about like the cork in which our Malaga grapes come packed.

In 1925, we discovered and purchased one of these old tanbark mills, which are now very rare, and moved it from its original location on the Stone farm in East Guilford, Conn., to its present site on the Litchfield Turn-



pike, Bethany, Conn. But little is known of the history of this mill, as none of the Stone family, or any of the old residents, who lived in or around that vicinity, could give us any information relative to it. We made a search of land and probate records as far back as 1746 but could find no mention of the mill. Even Grandmother Stone, who was born in 1840, knew it only as "a mound in the woods."

The mill is made of coarse red stone, and weighs a little over twenty-two tons. It has a circular trough, thirty-six feet in diameter, the bottom of which was broken to fit the granite ledge on which it was located. Because the trough was so beautifully cut and well preserved, it must have been done after the stones were placed in position. The inside diameter of the mill is eighteen feet, and has a large center stone, in which a square hole is cut to support the post attached to the shaft on which the crusher stone runs, being propelled by ox power.

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While I have seen several mills of similar construction, they are apparently of a later date, more lightly built, and were used for making cider, the crusher wheel being made either of stone or wood, but having a smooth edge instead of the corrugated cutting edge of the tanbark mill. On page 173 of *North Haven in the Nineteenth Century*, I find a description of one of these cider mills. It was operated by Dr. Trumbull, who was pastor of the North Haven Congregational Church, from 1760 to 1820, and reads as follows: "One hundred years ago Sabbath Day, Houses fringed the southern and part of the western border of our Green. The venerable Dr. Trumbull's cider mill was in close proximity to the easternmost of these buildings. The building was a clumsy structure, without covering, built upon the lines of the eighteenth century, and stood opposite the small brick house by the

brook. The apples were crushed by a heavy wooden wheel traveling in a narrow trough built in a circle, with a diameter of thirty or more feet. This wheel turned upon a long axle, the opposite end being pivoted in the center of the circle. Oxen furnished the motive power, and it was the small boy's duty to ride on the long arm and see that they kept moving." These wooden crusher wheels were preserved from one season to another, by rolling them into a nearby brook or swamp, thus eliminating drying or shrinking.

The fine workmanship found in these old stone mills fascinates me; and had it not been for the building of the Durham - Madison Highway, we might never have discovered the old tanbark mill. Crude and clumsy though it be, yet its solidity and ruggedness seem to typify the people who were living in that period; a people possessing great strength, patience and honesty, — virtues which people living in these perplexing days would do well to emulate.

Flax Dressing

(Continued from page 4, column 3)

or tow, and the long fibers or line. One-half of the length being heckled, the other half is turned around and prepared in a similar way" (L). The flax was almost always combed through a series of hetchels, ranging from coarse to fine (D, E, G), and from two (M) to six (A) in number. The hand method was still preferred in 1850 (M), but satisfactory machinery for the purpose came into use prior to 1866 (I). The tow was used for packing-cloth (D) and other coarse textiles. The line was ready for the spinner.

AUTHORITIES

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Candle Making

(Continued from page 2, column 2)

TYPE 13.

Pewter tubes. Wood frame.

1x4; 2x4; 2x6; 2x8; 3x6 (sometimes threaded); 3x8; 6x24.

DIPPING MACHINES

8 discs, 24 hooks (192 candles).
8 discs, 30 hooks (240 candles).
6 discs, 36 hooks (216 candles).
12 discs, 20 hooks (240 candles).

(N.B.—These are from Pennsylvania.)

The author (address, Bantam, Conn.) will be glad to hear of any other types or varieties of appliances for making candles. Mr. Albert Wells has a mould with wooden tubes. There are rumors of those with copper, brass, or glass tubes.

Early American Industries Association

Membership

Membership lists should be amended as follows: (N) indicates new member; (S) indicates non-member subscriber; (R) indicates reinstatement.

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South Norwalk: South Norwalk Public Library (S)

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Manchester: Woodbury, Mrs. Gordon, Box 148 (N)

Westmoreland: Bridgeman, Mrs. Roger L., (N)

NEW YORK

New Rochelle: Hadaway, William S., 63 Glenward Road (N); Nichols, Herbert B., 77 Rockland Place (N)

New York: Bull, Ludlow S., 21 E. 79th St. (R)

PENNSYLVANIA

Bethlehem: Drown, L. R., 1025 W. Broad St. (N)



Summer Beam

In an old house, the ceiling beam that extends from the chimney to the opposite wall is commonly known as a *summer-beam*. This is a redundancy, as a *summer* is a beam itself and has been so called for over five hundred years. The Greek root of the word means *pack-saddle*, and by the time it was adopted by the Gauls and later the French, it came to mean a burden carrier such as a donkey, or in English a *sumpter mule*. According to the monumental *New English Dictionary*, the first record of the use of the word as a wooden beam is in the accounts of Ely Cathedral for the year 1360, as follows: "xij lapidaribus, xx lintels, xij somers." The word is often used by Moxon (*Mechanic Exercises*, London, 1677) in his chapter on the construction of a house. He spells it sometimes with one "m" and sometimes with two. He refers to it as being any horizontal beam in the frame. A *bressumer* (breastsummer) is the second story front horizontal beam. Parker's *Architectural Glossary*, 1836, defines *summer* as: "The main beams; the girders were framed into the summers and the joists into the girders." — L. L. T.

Dr. Henry C. Mercer

Shortly after we issued our appeal for financial assistance in the month of March, we were considerably surprised, and needless to say, much gratified, to receive from Mr. Frank K. Swain, of Doylestown, Penna., a contribution of \$90, with a letter stating that, as a tribute to the late Dr. Henry C. Mercer, he wished to bear the entire expense of publishing one issue of *THE CHRONICLE*, preferably the July number, that being the nearest in point of time to the date of Dr. Mercer's birthday, which was late in June. Dr. Mercer, as every student of early American industry knows, was the pioneer in this field of research. Beginning in the late 1890's, he explored intensively the eastern part of Pennsylvania, especially Bucks County and the adjacent territory, for obsolete tools and utensils, and, with tireless persistence, sought out every available scrap of information as to their names and functions, which could be procured from those who, from experience or tradition, could shed light on the subject. The most impressive result of Dr. Mercer's activities is the vast collection of the Bucks County Historical Society, at Doylestown, which is housed in a great fire-proof building, and endowed to the extent of several hundred thousand dollars. No less important are his writings. The classic *Ancient Carpenter's Tools* is, and probably always will be, the standard treatise on American wood-working tools of the 18th and 19th centuries, and his pamphlets, *Tools of the Nation Maker*, *Light and Fire-making*, *The Bible in Iron*, as well as a host of shorter papers, included in the publications of the Bucks County Historical Society, are highly important reference works on their particular subjects.

The writer had the great privilege of a brief meeting with Dr. Mercer, shortly before his death in 1930, and was deeply impressed with the fervor of his belief in the importance of rescuing and preserving all relics of American industry, and of acquiring a better understanding of the basic part which they played in the country's history. Unfortunately, he did not live to enjoy the fruit of the seed which he had sown. Mr. Swain says, in part:

"He tried so hard — not always with success — to awaken interest in the subject, and to persuade people to come here and give talks, or to write papers, on the particular processes with which they were familiar. His frequent failures led him to believe that, when a few of the older members had passed away, all interest would die out. I must admit that the signs pointed that way, and I could offer little encouragement. He would have rejoiced over the fact that quite suddenly, — within the past two or three years, — a number of private collectors and collections have come to light, and he would have been fired with fresh energy. Especially would he have revelled in *THE CHRONICLE*, and taken much pride in its frequent references to *Ancient Carpenter's Tools*. I remember that he laid his first copy on the table, and said, 'Well, that's a long job, done at last, but I am afraid it is all to no purpose.' Inspired by my affectionate memory of Dr. Mercer, it gives me great satisfaction to make possible one complete issue of *THE CHRONICLE*."

— W. B. S.

The first American cloth mill was built by John Pearson, in Rowley, Mass. According to Edward Johnson's book, *Wonder-Working Providences of Zion's Saviour in New England*, published in London in 1654, "The Lord brought over the zealous affected and judicious servant of His, Master Ezekiel Rogers, with an holy and humble people, made his progress to the northeastward and erected a town about six miles from Ipswich, called Rowley — they were the first people that set upon making cloth in this western world."

— J. N. K.

A reaper that actually worked was invented by Henry Ogle in 1826. It consisted of a straight scythe blade, which moved against a series of triangular fingers, and cut the grain, which fell upon a collecting board.

— J. N. K.

The first dental chair, which provided such necessary conveniences as a head rest, changes in height and position of the seat and back, was designed by M. W. Hanchett in 1848.

— J. N. K.

COMMUNICATIONS

From MR. WILLIS H. ROPES:

"The Essex Institute, at Salem, Massachusetts, where the annual meeting of the Early American Industries Association was held last September, extends to the members of the Association who were unable to be present then, as well as to those who attended the all-too-short session, a hearty invitation to visit Salem this summer, with their friends, and see its countless historic places and treasures which are found in its museums and fine old houses. A few members made a hasty visit last year to the basement of the Essex Institute, where thousands of 'tools of the hand trades' are arranged on shelves, but not many were able to visit the 'Annex,' where accessories used in Colonial times are shown in great variety. Besides these household appliances, the 'Annex' contains extensive collections of early fire-fighting apparatus and fire buckets, a large lot of baskets used by Salem people in olden times, many old locks, wooden and metal, enormous iron keys with intricate wards, early pianos and melodeons,—some played with the elbow,—ancient vehicles and sleighs, bicycles and velocipedes, an alcove full of very early stoves and firebacks, not equalled in New England, a large collection of early 'New England Art,' and the most complete collection of Rogers groups in the United States. John Rogers was Salem born, and his cleverly modelled casts of New England, Civil War and Shakespearean subjects were very popular when first produced, later relegated to the attic, but are again highly prized and the unusual ones bring full prices. The Annex adjoins the small building, which encloses the old timbers of the first Quaker Meeting House of 1689, filled with early sewing machines, typewriters, agricultural implements and various other crude devices.

Besides these two buildings in the yard, back of the main museum of the Essex Institute is the John Ward house of 1684, one of four houses in Salem with overhanging second story, through which many members of the Association probably went, last September. Given to the Institute by the County of Essex and moved many years ago from St. Peter Street near by, it was faithfully restored, as of its period, by George Francis Dow, recently deceased, at that time Secretary of the Essex Institute.

As the historical and Colonial collections of the Essex Institute and its valuable publications are nationally

known, so the Peabody Museum, near by on the opposite side of Essex Street, shows, without charge, its unsurpassed collections of marine, biological, and ethnological objects, very many of the latter brought home from the South Sea Islands by Salem ships over a century ago. The collections are finely arranged, plainly labelled, and valued in excess of a million dollars, some classes exceeding in scope those of the British Museum. They should be seen, without fail, by all visitors to Salem, and require many hours even to hastily look over.

The members of the Association who saw the Pioneer Village at the head of Salem Harbor, were especially favored, as the Salem Chamber of Commerce was having a Field Day at the village and many of its members wore the Puritan costumes which were in use at the Tercentenary six years ago. A pamphlet descriptive of early conditions and uses was given to all attending, making a valuable souvenir to take away. The Pioneer Village grows in popularity every season, and all visitors—and all states are represented by motor plates—concede it is the best object lesson to be found in New England, illustrating the primitive methods used and hardships endured by the early settlers of Salem.

A visit to Salem would not be complete without a drive through its residential streets, especially Chestnut, Federal and Essex Streets, containing many houses built by Samuel McIntire, two of which (the Pingree and Pierce-Nichols houses) are owned by the Essex Institute. The House of Seven Gables, and the Ropes Memorial are open to visitors, and should be included in all itineraries.

Salem's first class hotel, The Hawthorne, will supply the creature comforts to all who come, and help make a visit to Salem something never to be forgotten."

From MR. FRANK K. SWAIN (to whom we sent an advance proof of the article on *Flax Dressing* for comment):

"The Flax article is fine and covers a very interesting subject. I saw nearly everything Dr. Mercer collected and have a very good collection myself but I believe I never saw a Ripple Comb (No. 1). We had a photograph

here of old Isaac Stover scutching flax in 1897 but I cannot find it. He built a scutching stand for the occasion, a board a foot wide and about 4 feet long which stood upright and nailed to a goodly sized block of wood lying on the ground, so it couldn't topple over. He held a lot of flax in his hand, threw it over the top of the board and then beat it with the knife and shook it so the woody particles fell to the ground. I bought a 1768 house a little while ago where the foundations of an old flax house still show. This is along a creek and I've been told it served a double purpose, as flax could be put in the water and then dried on poles overhead with a fire somewhere underneath the flax. We have a large flax-breaking wheel here in the museum, the only one I ever saw and quite homemade. The spokes, blade-like, seem to run through the rim a foot or more. This wheel with a crank was set on a frame, pretty much as a grindstone is, and, when turned, the extending arms struck the flax, laid crossways on the frame, and broke it. It was very heavy, and why the flax wasn't carried down through the frame I don't see. It doesn't seem reasonable but the machine is here and it turned at a great rate. An excellent article by Mr. Schutz on *Flax and Its Culture* (*Bucks County Historical Society Papers*, Vol. III, page 482) is well illustrated by photographs. These were taken at Dr. Mercer's farmer's house in 1897, and the old man and the woman were quite familiar with flax working. I see the swingling block has the hatchel fast to it, and a strap nailed on the upright for holding the scutching knife. This was constructed for the photographs and for demonstrating at a meeting of the Historical Society. The other tools were old, and as used and found on farms. No rippler is shown. Among the coarse textiles from tow would be the ticking or bed tick for holding straw, chaff, or feathers, also a bolsters and pillows and sacking bottoms for bedsteads. Here is where we get some very nice linen in large pieces, yellow to grey, and I had a large piece, pretty coarse and scratchy, with fragments of husks protruding, as if it had not been swingled and hatched to the limit and was intended for just what it was made into. Lots of grain bags were required on a farm, and some were very coarse and others of pretty good linen, especially those for flour. A bunch of fine finished flax, with its peculiar twist, and a glint unlike anything else, has always seemed a wonderful thing to me."

